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Using Waypoints with MobileMapper Pro

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Note: These instructions describe the latest version of MobileMapper Pro firmware and the latest version of MobileMapper Office. You may download the latest versions at no charge from the following folders on ftp.magellangps.com:

a. MobileMapper Pro firmware: /Mobile Mapping/MM Pro/Firmware
b. MobileMapper Office: /Mobile Mapping/MM Office/Software

How do I create waypoint files in MobileMapper Office for uploading to the MobileMapper Pro?

Click **Options>Select Coordinate System** and either select a previously used coordinate system or create a new one to match the coordinate system of the waypoints you wish to input into MobileMapper Office. Click **Tools > Place Waypoints** or click the **Place Waypoints** icon (a push pin) in the main tool bar. This launches the **Waypoints** window to the right of the map screen. You may select from a variety of map symbols to identify the waypoints. You may also use the box under the symbols to name the waypoint that you wish to place on the map. Then click on the location on the map screen where you wish to place the first waypoint. To see more precisely where the arrow cursor is located, you may refer to the coordinates' box to the lower right of the map screen. The level of precision here corresponds to the level of precision with which you can move the cursor. Once a waypoint is placed on the map screen, you can adjust its location with greater precision by editing its coordinates on the Waypoints window.

Note: use only alphanumeric characters, dashes and underscores when describing a waypoint in the Message field.

The coordinates' box (to the lower right of the map screen) only displays the coordinates of the arrow cursor when I'm in latitude/longitude. How do I display coordinates when using a grid system?

You probably have not selected the correct zone for your grid system. Click **Options > Coordinate System** and reselect the zone. If you do not know the zone, select the Geodetic, WGS84 option instead of the grid, position the arrow cursor in the center of your positions (features or waypoints) and make a note of the longitude. Then go back to **Options > Coordinate System**, reselect the grid system you want and select the zone based on the longitude in degrees that you just wrote down. To determine which state plane coordinate system zone you are in, please refer to http://www.ngs.noaa.gov/cgi-bin/spc_zones.prl.

I did not use the default name (WPT001) for the first waypoint, but when I add more waypoints each is automatically given the default name. Is there any way to automatically increment non-default waypoint names?

Because you are free to use all six characters to name your waypoints, the automatic incrementing of the waypoint names works only for the default waypoint name where the

first three characters are always "WPT" and the subsequent characters are numerals beginning with "001."
Note: use only alphanumeric characters, dashes and underscores when naming a waypoint.

How do I edit waypoint files in MobileMapper Office?

If you want to edit the parameters for your waypoints, we recommend that you first place the arrow cursor on the boundary between the map window and the waypoint window. Click and drag this boundary to the left so as to enlarge the waypoint window to reveal all the parameter fields that you may edit. To edit any parameter for any waypoint, double-click on the field and type in a new value. These parameters include:
- Display/hide waypoint
- Waypoint name
- Latitude (northing)
- Longitude (easting)
- Altitude
- Icon (map symbol)
- Message (Note: use only alphanumeric characters, dashes and underscores in the message field)

You will notice that there is increased level of precision when editing a waypoint's position: one one-thousandths of a minute or one tenth of a meter/foot.

How do I build routes in MobileMapper Office?

Once you have positioned some waypoints you may link them together to form routes. Click **Tools > Build Routes** or click the **Build Routes** icon next to the **Place Waypoints**' push pin icon. (The **Build Routes** icon represents three waypoints connected with straight lines.) Then use the arrow cursor to click on the waypoints in the desired order in which you want to build the route.

How do I save my waypoint files in MobileMapper Office?

All waypoint and route files must be associated with a MobileMapper job file (*.mmj). So, you first must save the waypoints to a job by clicking on **File > Save As**. When you select a job name, two files are actually created by MobileMapper Office: the job file (*filename*.mmj) and a separate waypoint file (*filename*.mmw). You do NOT have to import any features into the job file for the waypoint file to be generated.

How do I import waypoint files into MobileMapper Office for upload to the receiver?

In order to import a waypoint file into MobileMapper Office it must be in the same format as MobileMapper waypoint files or specially formatted .txt or .xls file. There is no conversion module to automate the importing of files in other formats.

A. Importing a .xls file
It is also possible to import waypoints contained in Microsoft Excel files if the format is correct. The diagram on the following page is an example of what information must be in

each column. Note: the first row of column headers is mandatory. Also, all entries in the Message field must contain only alphanumeric characters, dashes and underscores.

#	Name	Icon	Message	Latitude	Longitude	Altitude (m)	Latitude (degrees)	Longitude (degrees)	Icon ID
1	WPT001	Crossed Square		N37°21.087'	W121°56.186'	0	37.35145517	-121.93643283	a
2	WPT002	Crossed Square		N37°21.128'	W121°56.153'	0	37.35213600	-121.93589100	a
3	WPT003	Crossed Square		N37°21.090'	W121°56.070'	0	37.35150367	-121.93450083	a
4	WPT004	Crossed Square		N37°21.039'	W121°56.093'	0	37.35065350	-121.93488717	a

An Excel spreadsheet (MM Office Waypoint Formatter.xls) can help you with the formatting of waypoint files in spreadsheet format. It is located in the /Mobile Mapping/MM Office/Application Notes/ folder of ftp.magellangps.com.

B. Importing a .txt file
In order to import a txt waypoint file in .txt format, the file must contain the following information:

1. A command line: "$PMGNWPL"
2. A numeric field is the latitude in DDMM.MMMMM (Degrees.Minutes.Decimal Minutes to 5 places)
3. An N (or S) for north (or south) latitude
4. A second numeric field for the longitude in DDDMM.MMMMM format (Degrees/Minutes/Decimal Minutes to 5 places)
5. An E (or W) for east (west) longitude
6. A third numeric field (in the example below, a zero) for the altitude
7. A field for the units (must be the letter "M")
8. A field containing the waypoint's name, e.g., WPT001
9. A field for a message. Note: all entries in the Message field must contain only alphanumeric characters, dashes and underscores.
10. A final field containing a code for selecting a waypoint symbol:
    a. Input "a" for
    b. Input "b" for
    c. Input "t" for
    d. Input "v" for
    e. Input "x" for

Example of a waypoint file in .txt format
$PMGNWPL,3721.08731,N,12156.18597,W,0,M,WPT001,near tree,a
$PMGNWPL,3721.12816,N,12156.15346,W,0,M,WPT002,,a
$PMGNWPL,3721.09022,N,12156.07005,W,0,M,WPT003,,a
$PMGNWPL,3721.03921,N,12156.09323,W,0,M,WPT004,,a

After you have created the .txt or .xls file, in MobileMapper Office, click **File > Import** to open up the (mislabeled) **Import GIS Data** window. Select **Waypoint/Routes** in the

Files of type field. Browse to the folder containing the file you wish to import, highlight it and click **Open**. After importing a waypoint file into MobileMapper Office, you can edit waypoint names, icons and messages as desired.

How do I upload waypoint and/or route files into the MobileMapper Pro?

A. Create a job on your PC

With the waypoints/routes displayed on MobileMapper Office's map display area, click **File > Save As** to save the file to a folder on your PC. You may call the job whatever you want. This action saves both a job file (*.MMJ) and the waypoint file (*.MMW) to the same folder. When you upload the job to the receiver the waypoint files are automatically uploaded with the job. When you open the job file in the field, the receiver automatically displays the waypoints.

B. Upload the job to the receiver

There are two ways to upload a job to the receiver:
1. You may attach the receiver to your PC via the MobileMapper Pro's serial cable and in MobileMapper Office click **File > Upload to GPS > Job**.
2. Or you may put the receiver's SD card in a card reader and use Windows Explore to copy the job file (*.MMJ) and waypoint file (*.MMW) to the SD card. Then insert the card into the receiver.

Note: If you use a card reader for data communications between your MobileMapper Pro and PC, you only have to copy the waypoint file (.MMW) to the SD card. The job file (*.MMJ) may be discarded*

How do I display waypoints in the MobileMapper Pro?

There are two ways to do this:
1. Press the **MENU** button and select the **Card Utilities** option and then the **Load WP/Route** option.
2. Press **MENU** and select the **Setup** option and then the **Map Display** option. Press the right arrow button to move to the **Display** tab. Scroll down to the **Mark All** option or the **Waypoints** option and press **ENTER**. Then press **ESC** to accept the changes and move back to the **Setup** screen.

How do I display routes in the MobileMapper Pro?

To select a route, press the **MENU** button and select the **Routes** option. You then select the specific route you want to use, press enter and select the waypoint where you wish to begin using the route.

How do I hide waypoint files in the MobileMapper Pro?

Press **MENU** and select the **Setup** option and then the **Map Display** option. Press the right arrow button to move to the Display tab. Scroll down to the **Clear All** option or the **Waypoints** option and press **ENTER**. Then press **ESC** to accept the changes and move back to the **Setup** screen.

How do I edit waypoint descriptions in the MobileMapper Pro?

With the waypoint file selected for display, press the **NAV** button until you come to the **Map** screen. Then use the arrow button to move the map cursor over a waypoint symbol and press **ENTER**. If the name of the waypoint you have selected is correct, press **ENTER** a second time. You will now see a screen with the **Edit** option highlighted. Press **ENTER** again and you will see the **Edit Waypoint** screen. Use the arrow button to move to the field you wish to edit and press **ENTER**. Note: you can use only alphanumeric characters, dashes and underscores in waypoint names and message fields.

How do I create waypoints in the MobileMapper Pro?

You may either depress the **LOG** button for more than 2 seconds or press **MENU** and select the **Mark** option. Note: you can use only alphanumeric characters, dashes and underscores in waypoint names and message fields.

How do I delete waypoint files from the MobileMapper Pro?

You can do this in three ways:
1. When downloading files using the MobileMapper Transfer Utility, click any file you wish to delete and click the Delete button on your keyboard or on the Utility's tool bar. You can also right-click on any file and select the **Delete** option.
2. With the SD card in a card reader, use Windows Explore to delete any file.
3. Formatting an SD card will delete all the files on the card. Magellan recommends that you reformat your SD card before every project, or more often, if you wish. To do this, press **MENU** > **Card Utilities** > **Format Card**

How do I download waypoint files from the MobileMapper Pro to MobileMapper Office?

1. Attach the receiver to the PC using the serial data cable
2. Turn the receiver on
3. In MobileMapper Office, do either of the following:
    a. Click **File>Download Waypoints/Routes**
    b. Click **File>Download from GPS**

You may alternatively place the receiver's SD card in a card reader and, in MobileMapper Office, click **File > Download Waypoints/Routes** and navigate to the drive representing the card reader.

How can I use MobileMapper Office to edit waypoint files recorded in the field?

The process is the same as when you create waypoint files with MobileMapper Office.

Can I export waypoints out of MobileMapper Office?

Not with the present version. A workaround is to use the MobileMapper Pro to collect point features instead of waypoints. Point features can be much more conveniently described using feature libraries instead of the 30-character text field that is available for waypoints. Also, point features can be easily exported in GIS formats using MobileMapper Office.